

Effects of temperature, stocking density and farming conditions on fin damage in European sea bass (



This paper presents a non invasive, rapid and reliable way to quantitatively assess fin erosion in sea bass (*Dicentrarchus labrax*). The method is based on a visual assessment of fin profile and area loss of all fins except the anterior dorsal, on a scale from 0 to 4 in comparison with a perfect fin. The effects of stocking density (SD) and temperature on fin damage were investigated under experimental conditions (100–250 g fish). Over a 4-month period, mean erosion index (mean erosion level of all fins) was 10 times higher at 120 than at 20 kg m⁻³, where most fins were undamaged. Damage was also dependent on time and oxygen concentration (35% lower at 53% O₂ saturation than at 105%). Fin condition was also affected by temperature: mean erosion index was 0.22–0.25 at 13–16 °C, but five times higher at 25 °C. Caudal and dorsal fins were always the most eroded. Fin damage was then monitored in a large land-based farm using high SD, and in a small sea cage farm operating at low SD. At the first site, 6 batches of two market size groups were examined: L (850–930 g, 50–80 kg m⁻³) and S (375–400 g, 42–60 kg m⁻³). Fin condition was good in all batches (mean erosion index, 1.1–1.3) and lowest at the highest SD. At the second site, four batches of large fish (350–890 g, 26–24 kg m⁻³) and four other groups below market size (100–270 g, 8–16 kg m⁻³) were examined. Fin erosion was the highest in large fish (mean erosion index, 1.1–1.2) and in the sea cages most exposed to climatic disturbances. In both sites, the most eroded fins were the caudal and dorsal. Differences in other external injuries were also observed between the two sites (less necrosis and more scale injuries in sea cages). The causes of fin damage are discussed in relation to metabolic and/or behavioral adaptations to rearing conditions and the main actions that could be taken to improve fin condition are discussed.

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